IN THE CLAIMS:

1. (cancelled)

2. (cancelled)

3. (cancelled)

4. (currently amended) ~~The pressure sensor in claim 1,~~ A pressure sensor comprising

a substrate with an opening; and

a flexible diaphragm held across the opening of the substrate

wherein at temperatures of at least about 400 °C, the pressure sensor has a gage factor of at least about 22.

5. (original) The pressure sensor in claim 4, wherein the pressure sensor has a gage factor of at least about 30.

6. (original) The pressure sensor in claim 4, wherein the pressure sensor has a gage factor of at least about 35.

7. (currently amended) The pressure sensor in claim ~~1~~4, wherein at temperatures of at least about 550 °C, the pressure sensor has a gage factor of at least about 16.

8. (original) The pressure sensor in claim 7, wherein the pressure sensor has a gage factor of at least about 25.

9. (original) The pressure sensor in claim 7, wherein the pressure sensor has a gage factor of at least about 35.

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (currently amended) ~~The pressure sensor in claim 10,~~ A pressure sensor comprising

a pressure sensing element; and

a heating element capable of heating the pressure sensing element to at least about the application temperature of the pressure sensor

wherein the pressure sensing element is made from a shape memory alloy material.

14. (cancelled)

15. (cancelled)

16. (cancelled)

17. (cancelled)

18. (cancelled) The pressure sensor in claim 16, wherein.

19. (currently amended) ~~The pressure sensor in claim 18,~~ A pressure sensor comprising

a substrate with an opening having a maximum cross-sectional dimension of less than about 1.0 mm; and

a flexible diaphragm

wherein the flexible diaphragm has a thickness of less than 350 um extending across the opening of the substrate and the pressure sensor is capable of measuring pressures of greater than 3000 psi without premature failure.

20. (cancelled)